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                                 Highlights
                                 ----------
          ~ From the Editor's Desk           ~ CPU Report
          ~ A Wish List!                     ~ Atari in a GHETTO??
          ~ Calamus PART II                  ~ ST REPORT CONFIDENTIAL
          ~ Hard Disk Facts - Not Myths!     ~ Atarians in Space

             ****  68030 RUNS UNIX 5.3 & TOS 1.4!  ****
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From the Editor's Desk:

     Times have changed indeed! Two...not one, but two prominent magazines
have stated that Atari, in it's haste to get the 68030 based computer out
on the market have actually used the MAC ROMS!! The has to border on the
verge of insanity...imagine, if you can, Atari using Mac roms and then

Apple's Legal Dep't. gets wind of this situation. It appears that such a
statement is merely ambitious wishful thinking. 'Tis a shame that these
two hard copy giants have fallen into the trap of;

                    "Trying to make gossip ..the truth".

        It is imperative that we see a strong and concentrated effort made
in enhancing the ST/Mega line and provide a full tilt upgrade path for the
existing userbase, be they 8 bit or 16. To boldly begin a life renewing
effort in the states by merely offering 'new' products is a slap in the
face of present customers. It is quite apparent they are indirectly but
effectively being told, "buy a new machine". Atari would be well advised
to make certain that the present userbase has a clear and economical
upgrade path.   (A word to the wise and prudent)

        Curiously, here we are in February and all we actually have heard
about is a 25.00 swivel base for a monitor. Incredible! Radio Shack has
had a beautiful, color co-ordinated swivel monitor stand for 2 or more
years for $16.00...K-Mart sells a similar stand for 6.00!! I know, I use
four. Let's get real, Atari is going to need much more than a base mount
for a monitor to capture the interest of the US market. To witness a
trivial item, (a monitor stand), gain such exposure only proves the 'lack'
of real information about Atari and it's enhancements for the ST or new
products. This does not however, mean that they are not there, the new
products and news are elsewhere in this issue.

        The week of March 20, 1989 is the BIG WEEK for STReport, We will
begin mailing out our complimentary issues of our NEW HARD COPY newsletter.
To reserve your copy, just drop us a note via E-Mail or, to our PO Box.
Be sure to include your full name, address and phone number and remember,
the intro copies are free!

        Once again, many thanks to all the readers who have left us
congratulatory mail on the services and our support BBS. We will strive
to maintain the high level of quality, originality and ongoing refreshing
changes. We have noticed that STReport is gaining inpopularity with our
friends overseas and will, in the near future, carry articles originating
from the "Old Country". Many thanks to the folks in the UK for the strong
positive support mail we have been receiving through F-NET/FIDOMAIL.

                                        Ralph.......

                    "1989 - ATARI'S QUEST!"

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                    :HOW TO GET YOUR OWN GENIE ACCOUNT:

        To sign up for GEnie service: Call: (with modem) 800-638-8369.

            Upon connection type HHH (RETURN after that).
                    Wait for the U#= prompt.
                Type XJM11877,GEnie and hit RETURN.
            The system will prompt you for your information.

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              THE GENIE ATARI ST ROUNDTABLE - AN OVERVIEW
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The Roundtable is an area of GEnie specifically set aside for owners and
users of Atari ST computers, although all are welcome to participate.

There are three main sections to the Roundtable: the Bulletin Board, the
Software Library and the Real Time Conference area.

The Bulletin Board contains messages from Roundtable members on a variety
of Topics, organized under several Categories. These messages are all
open and available for all to read (GEnie Mail should be used for private
messages). If you have a question, comment, hot rumor or an answer to
someone else's question, the Bulletin Board is the place to share it.

The Software Library is where we keep the Public Domain software files
that are available to all Roundtable members. You can 'download' any of
these files into your own computer by using a Terminal Program which uses
the 'XMODEM' file-transfer method. You can also share your favorite Public
Domain programs and files with other Roundtable members by 'uploading'
them to the Software Library. Uploading on GEnie is FREE, so you are
encouraged to participate and help your Roundtable grow.

The Real Time Conference is an area where two or more Roundtable members
may get together and 'talk' in 'real-time'. You can participate in
organized conferences with special guests, drop in on our weekly Open
COnference, or simply join in on an impromptu chat session. Unlike posting
messages or Mail for other members to read at some later time, everyone in
the Conference area can see what you type immediately, and can respond to
you right away, in an 'electronic conversation'.

    ****

CPU REPORTâ ¢
 Issue #8

By Michael Arthur

Remember When....

     Atari changed the Abaq Transputer's name to the ATW (Atari Transputer
Workstation) because a Belgian Firm had prior rights to the name Abaq and
Atari didn't want to pay to license it?

CPU INSIGHTSâ ¢
=============

     CPU Systems Roundup Iâ ¢ - An Ode to the Ins and Outs of Multitasking

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     In Part I of this series, I analyzed the various tasks that a
multitasking OS performs, while showing some aspects of the many possible
capabilities of multitasking systems. In this segment, I will study some of
the ways that multitasking can be implemented, and show some of the extra
features in some systems that help make multitasking more efficient.

Part II

     The key component in a multitasking system is the way it divides the
computer's CPU time between the tasks currently running on it. One aspect
of this, the various functions and jobs of a multitasking system, has been
discussed. Now I will explore the methods that multitasking systems use
to perform their tasks. Even though there are many ways of distributing
CPU time between all running processes, there are two distinct methods of
doing this: Cooperative scheduling, and preemptive scheduling.

                      Cooperative Multitasking

     In cooperative (or nonpreemptive) scheduling, it is the tasks
running on the system, not the OS itself, that control the multitasking
process. When a task is given the CPU, it gains sole usage of the system
until it decides to relinquish control to another task. There are a couple
of advantages to this method. An application can complete some vital
tasks immediately, then allow the others to run in the background, and a
program in a cooperative system can do certain things (such as controlling
events and peripherals that function in real-time) more efficiently than
otherwise possible in a multitasking system. But there are many
disadvantages to cooperative scheduling, which have kept this system from
being used as widely as preemptive multitasking.

     For one thing, cooperative scheduling requires that all programs be
VERY well behaved. If a task holds up the CPU for too long, even while
doing an important job, response time will suffer greatly. But even more
seriously, if a task doesn't relinquish control of the CPU or a system
resource (due to a software bug), other programs that need those resources
won't be able to function, causing a situation, called deadlock, which can
halt those tasks, or even crash the multitasking system itself.

                      Preemptive Multitasking

     But while cooperative scheduling does not seem like multitasking,
at least in the standard sense, preemptive scheduling closely follows the
strict definition of multitasking. In this type of system, a task is not
guaranteed sole usage of the CPU for a certain amount of time, but rather,
can lose it at any time, so another task can run. Because a running task
doesn't need to know this is occurring, and since a multitasking system is
supposed to do its job as transparently as possible, the OS usually makes
each individual task think it is the only one using the system. Although
there are many ways of implementing preemptive schedulers, practically all
of them are based on two schemes: round-robin, and priority-based
scheduling.

A round-robin scheduler simply makes the tasks take turns, giving each task an equal amount of CPU time in which to run. This type of scheduler is VERY easy to implement, and guarantees that all tasks will get a certain amount of CPU time. But often programs running on a system do not need the same amount of CPU time at all instances (such as a word processor and a spreadsheet), and giving CPU time to tasks that don't need it is NOT efficient at all.

Priority-based schedulers help to solve this dilemma. In this situation, each program is given a priority level, according to how CPU intensive (like a spreadsheet recalculation) or time critical (like a file transfer from a BBS) a task is, or how quickly it interacts with the user (such as a game, or a program in the foreground). The scheduler then distributes CPU time to each task according to how high its priority level is, and the higher the priority level, the more CPU time a particular task gets.

For example, if task A has a higher priority level than task B, then task A will get the CPU before B, and will be able to use it for a greater amount of time. But if both tasks have an equal priority level, then the system doles out CPU time in a round-robin fashion. Priority levels apply to all aspects of system operation, so if tasks A and B ask for use of a system resource, such as a printer, and task A has a higher priority level than B, task A would get that system resource (in this case, the printer) first. By the way, since the amount of CPU time needed by a program can vary, depending on the type of task it is performing, the scheduler can also adjust the priority level of a program as needed.

There are MANY advantages to preemptive scheduling, which have caused it to become standard procedure for most multitasking systems. Not only do preemptive systems have better tolerance of errors and ill-behaved programs than cooperative ones, as well as being less fragile, but many types of interprocess communication can only be used with it. The main disadvantage to preemptive schedulers as compared to cooperative ones is that they are a LOT harder to implement than cooperative schedulers. Also, they cannot know when is the optimal time for a task to relinquish the CPU as only the task itself could have this information. This often results in the program completing its tasks less efficiently than with a cooperative multitasker. Priority-based schedulers help to provide this "intelligent" switching for preemptive systems, though....

Problems, Problems, Problems

Although multitasking is a very useful, versatile, and powerful tool, with many integrated ways of preventing errors from occurring, problems inevitably arise, even in the best systems. We all know that in singletasking systems, there is always a chance that it will crash, at one point or another, as the job of an operating system isn't easy in the first place. But with the added strain of distributing system resources and CPU time between the many tasks that might be running, managing any interprocess communications between those tasks, and making sure that both occur as efficiently as possible, the problems that come with an ordinary operating system quickly multiply. Many of the utilities now associated with multitasking systems, such as virtual memory and Memory Management Units (MMU's), actually arose to solve these problems. Even though there are an infinite amount of problems waiting to happen in a multitasking

system, here are some of the most prevalent:

Deadlock: In a multitasking operating system, whether it be cooperative
or preemptive, tasks always compete for access to system resources. For
Disk Access, this problem can be easily solved, but for other resources,
such as printers or modems, multitaskers usually give one task sole access
to a resource, forcing the other tasks that need it to wait until it is
finished using it. Since these other tasks often are also holding
resources, which are also locked up until the task can continue operation,
this can cause quite a traffic jam, as all tasks slow to a halt as they
wait for the others to relinquish their resources. This complex situation
is called deadlock.

        For instance, let's say that Task A is using System Resource 1 to do
its work, while Task B is using Resource 2 to do its work. So that no
other task can interfere with its work, Task A has a lock on Resource 1,
while Task B has a lock on Resource 2. Now suppose that Task A needs
Resource 2 to complete its task, while Task B needs Resource 1 for its
duties. Since Task A cannot run until Task B gives up Resource 2, and
Task B cannot run until Task A gives up Resource 1, and since both won't
give up their resources, neither can proceed. As you can see, deadlock
only happens when a task is allowed to hold onto resources it is not
using at the time, so it would seem simple to make all tasks give up their
resources after their CPU time is up. But if that resource happens to be
a printer, and two tasks, a word processor and a spreadsheet, are trying
to print on the same printer, if you allow BOTH of them to print at the
same time....

        So since it is necessary in some instances to allow tasks to
monopolize system resources, then deadlock is not always preventable. In
fact, since the overhead involved in making an operating system that made
sure that deadlock never occured (meaning that it would have to be prepared
for ANY eventuality that could happen in multitasking systems), would be
ENORMOUS, most multitaskers (including Unix) are able to kill off as many
tasks as necessary to stop deadlock. Since one of the "unlucky" tasks
could be something that was VERY important, like your 1040 IRS Tax Form,
this is not always preferable. Barring this, the multitasker would then
stop everything and do nothing. Called a system crash, all computers have
special hardware to handle this situation, called the reset button....

Busy Waiting: This happens when one task is using a system resource by
itself (through its having higher priority or using a semaphore), and
another task cannot proceed without having access to the resource. The
task then is forced to waste CPU time waiting to have access to that
system resource. Since this tends to halt system performance (especially
if the task is also monopolizing a system resource, which would then result
in deadlock), it is considered one of the worst things that a multitasker
can do. But interestingly, Busy Waiting is sometimes used to avoid or
cure deadlock, by simply making task B wait until task A is finished and
gives up the system resource, before it can use the system.

Memory Management: There are MANY problems that often emerge in this
subject. One is, simply enough, running out of memory. One popular way
to conserve memory is to have built-in system libraries, that programmers
can use for their applications. But when there are just so many programs
runnin that they all won't fit in memory, multitasking systems often use
virtual memory to cram them in.

Virtual memory simply uses all available Disk Space (Floppy or Hard Disk) as memory, saving a portion of a task to disk that is now in RAM, but is not being used by any program running on the system, and later, when there is enough memory to hold the data segment (or if the task needs to use the data segment), loading it back into memory. In a multitasking system this is used to swap portions of programs in and out of memory as they need them. So if the system was using Virtual Memory, and Task A had a segment of itself on disk while Task B was running, then when Task A receives use of the CPU, if it needs that segment to run, then the system would first save a segment of Task B that hadn't been used for a while to disk, and then load the segment needed by Task A into memory. But Virtual memory can be used, not only to let programs use more data that can fit into real memory (like editing a text file that won't fit into memory by saving parts of it to a disk file), but can also be implemented in ordinary singletasking systems.

There are dangers to using Virtual Memory, though. Virtual memory works fine when the segments that are saved onto disk are relatively small and mostly unused, but if the system loads too great a segment of a task into memory, then the system spends a long time loading and saving data segments to/from disk so to make enough room when a task loads in that segment. If the system loads too little a segment of the task in memory, though, then it hasn't saved enough memory for another task. Also, if all the data segments in memory are being used frequently, then the system thrashes, or spends so much time swapping segments to and from memory that little real work is accomplished. Both of these cases cause deadlock, and to stop them one either has to quit running a program that is in memory, so as to make room for other tasks to run in, or to simply turn off the computer and start over again.

Memory Protection: Even though running out of memory IS a real problem in multitasking systems, almost everyone would agree that memory management is far more serious. The function of most memory managers, whether they are in software or hardware, is to prevent system memory from being fragmented. This occurs when, after the system has done several memory allocations and deallocations in its normal memory handling duties, free RAM becomes divided into many small fragments spread throughout its address space, which cannot be used by the system. If enough free RAM becomes fragmented, the system starts to lose large amounts of memory.

Since this also happens in singletasking operating systems, all operating systems perform a technique called garbage collection, in which all of this fragmented memory is collected, organized, and put back into the system's main RAM. Even though this might sound simple, the processes by which it gets this lost memory are VERY complicated. And even though software memory management CAN get the job done in most cases, it often is inefficient, and sometimes cannot properly handle its job.

And as hardware is often more efficient, less troublesome, and better suited at this type of work than software, chips that could perform memory management functions started to appear. These processors, called Memory Management Units (or MMU's), are specifically made to handle garbage collection and memory management functions, so an operating system doesn't have to do them. Another task that MMU's often perform for the operating system is memory protection, both preventing tasks from having access to system memory that hasn't been allocated to them, or from disturbing other tasks or resources when they crash, so the whole system doesn't crash just because of one faulty program.

In this series, CPU Report has investigated the subject of multitasking, in an attempt to get a better understanding of this complex issue. While the goal was not meant to be the "definitive" guide to multitasking, as great stacks of books have been written on the subject, it has tried to show many of the pertinent issues involved in this topic, which is quickly approaching the forefront of sophisticated microcomputer technology.

But ponder, if you will, this question:

1) What would it take to convert a singletasking OS into an efficient and powerful multitasking OS while maintaining compatibility?


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CPU REPORT CONFIDENTIALâ ¢
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Portland, OR ------------	Intel is preparing to announce their 80486 chip later in 1989. This new microprocessor will reportedly have both a floating point unit and a memory management unit built in, and MIGHT be a 64-bit processor....
Cupertino, CA -------------	Apple has recently released Version 6.0.3 of their Macintosh Finder/Multifinder OS. Its main focus is believed to be correcting the numerous bugs found in Version 6.0, which included incompatibilities with MANY Mac programs however, 6.0.3 is a memory hog.
West Chester, PA ----------------	Commodore is developing the Amiga 2500, a new version of the Amiga 2000 which has a 14.23 MHZ 68020 w/68881 math chip, 2 Megs of 32-bit RAM, and a 40 Meg Hard Drive. THIS UNIT IS ALREADY BEING OFFERED VIA MAIL ORDER! (Computer Shopper 2/89)

STR Spotlightâ ¢
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A WISH LIST FOR 1989

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        This is not an "impossible dream list, it is, however, a realistic
wish list...Hopefully, Atari Corp. has the same hopes and aspirations..

        To begin with:
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                a) TOS 1.4 on time for Spring Comdex (actually shipping)

                b) MEGA-2/4 upgrades available (memory, speed, exp. slots)

                c) ULTRASCRIPT in the hands of the users by Spring Comdex

                d) NEW Product development in full swing for showings by fall

                e) NATIONAL ADVERTISING... not if, but When?

                f) A Realistic Dealer program and network for Sales/Service

                g) Make the * 30,000 * machines a month shipped a real goal.

THE WISH:

        There is not an Atari user in the entire United States who does not
want Atari to reach their goals. There are, however, many users who have
become cautiously 'doubtful' that Atari is serious. Many of us believe
they are and will come through for us. The major point to make is, once
again not harp on this subject, Advertising. A solid advertising
campaign is paramount to successfull market penetration. Tell the whole
country just what this ST is capable of and the profits will allow 10x the
advertising budget next year.

        The ST computer line is an outstanding group of computers, but
because of the LACK of advertising and publicity, it now has the
distinction of being classed as a Ghetto machine (barf). Atari it is time
..let's see you awaken the sleeping giant known as the American market
place.   (please spend the bux and advertise)

A MAIN OBJECTIVE:

        A crippling situation to ANY business is "THE DREADED BACKORDER"!!
Many companies, large and small, have a tendency to lump all product flow
failures into the "it's on backorder" syndrome. This may satisfy the
clamoring dealers and customers for a time but as old Abe Lincoln said,
"you can fool some of the people all of the time and all of the people some
of the time but NEVER all the people all of the time"...those folks in high
management must, above all else, make sure the backorder blues are indeed a
thing of the past.

        Backorders are usually a result of one of the following:

                a)- A key individual failed to act on re-orders in a timely
                    fashion. (sheer incompetency).

b)- A key individual has no real idea of what the market needs
             are in the product area effected. (more incompetency).

        c)- Person handling inventory control dropped the ball!

        d)- Demand was totally out of proportioon to supply on hand.
             This situation is pure profit and should happen only once
             if it occurs more than once, the person in charge of
             purchasing should be assigned an assistant or replaced.

        e)- Company has little or no credibility with it's suppliers.
             Usually due to poor past performance...

        In summary, BACKORDERS have no place in the business world on a
regular basis. They reflect the inability of those people assigned,
(making sure there are no backorders), to do the job efficiently. Any
company experiencing a rash of backorders would be well advised to
rethink it's procurement procedures. Backorders destroy the marketing
momentum, credibility and reliability levels of any business plagued by
the scourge of backorders.

STR Featureâ ¢

        The following article appeared in the NY Times and in the message
bases of CIS...Although the facts contained herein appear to be quite
accurate, the manner in which they are presented leave a great deal to be
desired. (our opinion only) Notations have been made where we felt a
more genuine presentation of the information was needed.

                          ATARI IN A GHETTO?
                          ==================

An Overview of:

Power and Flexibility in an Atari"

by R. L. Shannon,

N.Y. TIMES
Tues: January 31, 1989

    Neil Harris, for years an executive of the ATARI CORPORATION, likes to
say that the ATARI and the AMIGA live in the "ghetto" of personal computing.
Users in the mainstream -- that is, users of I.B.M. compatible and
MacIntosh computers -- prefer to pretend that ATARI and AMIGA do not exist,

even though the machines are better in some ways and are more cost-effective for many users.

>>> GHETTO? What is meant by this? Does it refer to those who own the machine or the demographic studies of the machines? Does it point to the ultimate 'end' of the machine. Does it imply any relationship to some of the more famous GHETTOS in contemporary history?   Or, ..has N. Harris been misquoted, once again? (Neil holds the dubious distinction of being one of the most misquoted guys in history!)

    This superiority is particularly clear with ATARI's new MEGA ST computers, powerful additions to the 540ST (sic) and 1040ST family. They come in two models, the MEGA ST2 and the MEGA ST4, with two and four megabytes of internal memory, respectively. That is a lot of memory, and it is out of reach for many users of other computers. The following report is based on several months of occasional use of an ST4 but virtually everything also applies to the ST2.

    In the older machines (as well as in the AMIGA 500) the entire works of the computer, including the disk drive, are packed into the keyboard, making for a bulky, desk-hogging unit. The ST4 is set up more conventionally, with a separate keyboard and a central processing unit, including one disk drive, on top of which sits the monitor. This arrangement gives the user greater flexibility in setting up the system. A mouse, which is essential, plugs into the keyboard.

    The keyboard has a solid feel and sports the usual control, alternate, escape and cursor keys, as well as a separate numeric keypad and 10 function keys with various uses in different programs. The main unit has a set of ports for attaching a variety of peripherals, including electronic musical instruments. The power switch and the reset button are grouped with these connections in the back, where they may sometimes be awkward to reach.

    Keyboard, central processing unit and monitor are all a matching grey, somewhat darker than the off-white that almost everyone else, following the lead of I.B.M., thinks is obligatory for computer systems. That, combined with diagonal styling and the fact that high-resolution monochrome monitor shows easy-to-read black letters or graphics on a light-gray background, rather than the customary green or amber, gives the ATARI a distinctive and handsome look. A low to medium-resolution color monitor is also offered, and is recommended for a machine with such outstanding graphics and a palette of 512 colors.

    The ATARI runs with Digital Research's GEM operating system, where an on-screen pointer is moved with a mouse to perform tasks or select options. This operation is learned more quickly that those in which hard-to-remember commands must be accurately typed, and it is the direction the whole personal computer industry is moving toward. Also, if software developers adhere to the standards set by the operating system, the user can start using a new piece of software with less effort.

    The single built-in disk drive users 3.5-inch floppies that store 720 kilobytes of data. That is paltry storage, for a machine that can remember 4 million things at once, but a separate hard disk drive are extra-cost additions. For technically sophisticated readers: the processor is an MC68000 with 32-bit internal and 16-bit external architecture, a 24-bit address bus and an 8 megahertz clock frequency.

The prices are relatively modest for computers of such power. The ST2
is $1,699.95, the ST4 $1,899.95; the monochrome monitor is $239.95; the
color version $259.95. A 30-megabyte hard drive costs $899.95. There is
even a laser printer in the system, which I have not tried yet, for
$1,999.95. These are list prices, and discounts are widely available in
this competitive industry. (The shortage and cost of memory chips may limit
the availability of the ST4

>>> There is NO shortages of the MEGA ST4 or 2 for any reason..also, the
author has forgotten the 520 STFM .5 mb memory and the 1040ST 1 mb memory.

     With all this going for it, why does Mr. Harris say ATARI is in the
ghetto? Most computers used in business are I.B.M.-compatible (or
MacIntoshes), with vast libraries of interchangeable software and the
security of dealing with well-established standards. A MEGA ST sets its own
standard, a wonderful one, but one with limited or nonexistent compatibility
with other operating systems.

>>> LIMITED OR NON-EXISTANT??? Will somebody please enlighten this fellow
to PC Ditto, Magic SAC, Alladin and last and most popular, SPECTRE 128.
Also the ST will read and write to IBM formatted disks. The above
mentioned emulators (readily available) permit the ST to load and run
MACINTOSH and IBM software, and it might added, in most cases, more
efficiently than the system it was originally written for.

     A lone hobbyist, or a user -- a musician, say, or a desktop publisher
-- who needs the specific features of this computer and its software will be
well served by it. But a person who works in an environment that is already
committed to another standard must view ATARI more skeptically, despite its
strengths in doing business jobs.

>>> SKEPTICALLY??? The main reason for the skepticsm is Atari's own fault.
It most certainly is not the machine's fault. The problem here is a
wanton disregard of the value of NATIONAL ADVERTISING on the part of Atari
Corp. here in the USA. According to S.Tramiel, Pres. Atari, the lack of
advertising is a thing of the past. The ST is more than capable to hold
it's own in many fields with other computers and in some (ie: DTP) will
exceed most in power and in the ability to get the job done.

                              * * *

>>> Our observation of this article is really not critical, but, in fact,
we notice a strong lack of real experience in using the ST. We saw where
it stated the author "used" the ST occasionally.

                "a few keystrokes does not an expert make".

     Atarians are, in general, tired of being singled out as the oddballs
in the computer industry. The true fact is, we have been the object of a
few subtle but very powerful campaigns devised to downplay the power and
versatility of the ST computer system. The ST computers have more BANG FOR
THE BUCK than any ...I repeat any, computer made. With the proper third

party development and support the ST clearly would dominate the computer
scene in the USA and ultimately on a world wide basis. All we need do is
have the rest of the folks "find" the ST! Then by sheer numbers and
sheer numbers only, the ST would become THE machine to own. "Sort of like
the Ford-Chevy-Chrysler of the computer world."

        For this to occur, we need a few major things to occur, to begin
with, Atari itself must awaken and breathe life into the US market by
advertising on a National basis, (not in Atari oriented publications, why
advertise to those who already know about the product?), thereby causing a
high degree of product recognition. Also, we must begin to see the
reviewers do full and in depth reviews in the national media.

        In our humble opinion, we are, once again, subjected to a 'tongue in
cheek, left handed, compliment'. Clearly this author needs to hear from
experienced ST users. Perhaps then, he will be more than just tolerant
towards the ST. An honest to goodness review of the ST is not an overview
of the contents of the shipping carton. Reasonably speaking, a decent
hardware review is a bit more than that...wonder what the software reviews
would reflect.

STR Reviewâ ¢
==========

                          Calamus Part II
                          ================
By William Y. Baugh

            Hello again! This week I'll once again be writing about Calamus,
            but go somewhat more indepth, building on what I wrote last week.
            I'll start as if the program was already booted and ready to to
            roll.

            To begin working, you must first either load in a previously
            created file or start from scratch. Once either is selected, you
            are presented with a full size view of the page.   This view is
            changeable either by dropping down the View menu or by using the
            icons in the upper middle of the screen. The three icons select
            between full page (which is presently displayed), normal display
            or a definable display which defaults to 200%, but can be set to
            any size you are comfortable with.   I like about a 80% size,
            which zooms in, but still keeps the page width within limits of
            the screen (no horizontal scrolling).   Depending upon the
            function being executed will dictate the size of the screen.   If
            you are importing text, or doing massive font style changes, you
            will want to see the entire page.   But on the other hand, if
            you're working on raster graphics, it's nice to be able to have
            the page zoomed in for closer scrutiny.

Now it's time to define the work area (framing).   Unlike other
DTP's, Calamus handles this function quite differently. Under
the arrow icon, there are seven different icons; these are used
to define the frames and what will be placed within them.   The
icons are as follows: Text, line, Raster area, Vector graphics
(DEGAS, etc), Raster graphics (Geometric, definable shapes),
header/footer and rotated text frames. When each frame is drawn,
the icon it is represented by remains in the frame, thus allowing
easy identification. Also, every frame has its own "effects"
icon that allows you to modify the existing parameters, choose
different graphics, etc.   These features are the heart of
Calamus, and where you will probably spend the most time working
from.

When each frame is drawn, you always have the ability to change
the size (this may also be done proportionally), protect the
frame so no accidental work or deletions occur, move, copy and
delete frames.   If you have one frame overlapping another, you
may choose to move the frame into the background or keep it in
the foreground.   This, accompanied with the raster graphics, can
make some spectacular effects.

Text input is handled conveniently with the features of the text
editor and special functions found within the text icon.   There
are eight icons lining the top of the text side menu which allow
you to view the selected character set and dictionary, display
text rulers, change font size and styles, create text macros and
use the built-in clipboard. I touched on the editor briefly last
week, which means I did not do it full justice. The editor is a
separate GEM window which may be moved and sized as you please.
This feature also differs from most DTP's in that you have the
editor to type with; no more typing in the frame and hassling
with the proportional spacing. You may send your created text to
the desired text frame or receive text from a frame.

The font and justification codes are displayed in the editor and
may be changed therein.   The editor is very nice, but is
recommended only for small text inputs. Within the windows, text
rulers are offered to help in the formatting of the text.
The rulers display the margins, tabs, and the justification
chosen. You may change any of these by clicking and holding the
appropriate icon. For larger works, importation as ASCII or
from several popular word processors (WordPerfect, Wordwriter
ST and 1st Word) is preferable. The importation of text from the
word processor keeps paragraphs and structural aspects complete.
ASCII, on the other hand, can be brought in structured or
unstructured; but in creating the file as ASCII, you lose some of
the structure, depending upon the word processor.

The text macros are a god-send for desktop publishing; especially
one as advanced as Calamus.   The ability to store up to 21
different macros allows great flexibility plus, it makes it easy
on you and your mouse.   When you define a macro, you give it a
title to reference through the macro menu and a keyboard
equivalent.   From the keyboard, you just press the control key
and the defined key to execute the macro. Macros may be defined
as "text, differing styles of text and instructions, plus
formatting commands."

The clipboard may be used as a temporary storage for blocks of
text.   The text may be just part of a column ,headline, etc. or
may be footnote entries or indexes. These entries may be taken
at a later time and inserted into the Header/Footer frames. Any
of these may be left in the clipboard, while the original is
deleted from the working page.

Within the fonts icon, you may choose between two different fonts
(more may be purchased through ISD or you may buy a Font Editor
and create your own) and whatever point size you want. The sizes
range from 10 points up to a full page! Since the program works
independent of GDOS, you have this amazing flexibility with the
fonts. The fonts included are not too fancy, but work quite well
as either body text or as a headline.

Once you have your text inplace, you may want to highlight it by
using either line frames or the raster graphics frames. Line
frames allow you to display either lines (of course) or arrows
which may point to the text, title, picture etc., to emphasize a
certain aspect of your page. The raster graphics are interesting
in that they allow you to choose from a variety of geometric
shapes, fill, shadow, and framing patterns to create very
interesting effects. There are a number of different patterns,
plus they are also user definable (you may create your own).
With these graphics, in conjunction with the line frames, the
possibilities are endless for creating special effects on the
page.

Another eye catching feature is the ability to rotate text. When
the frame is drawn, text may be imported or typed in the editor,
brought into the frame and rotated, with no distortion. This
works very well for title pages and advertisements.

Vector graphic frames are the areas where DEGAS, .IMG, .GEM, etc.
files are imported. These window are like any other in that they
may be sized, moved, and copied. Importation of graphics is
fast! ISD's screen algorithm must be one of the best, because
this is the fastest importation and screen updating that I've
seen. This becomes important when you have multiple drawings on
the screen and want to scroll, say, vertically. In some DTP's,
you would cringe at the thought, but in Calamus, it's a breeze.

Being such a complex program, it can not be summed up in just a
few pages. I highly recommend you try this program for yourself.
I think you will be amazed at the work and thought that has gone
into Calamus.

ST REPORT CONFIDENTIALâ ¢
=====================

> Sunnyvale, CA   **** SHORTAGES and BACKORDERS SUBSIDE! ****

     Atari, it would appear, is experiencing more than it's fair share of
backorders and component shortages. In the last six months there have been
more than one occurance of the SC1224 being in extremely short supply.
This is a situation that can do nothing but injure the revitalization of
Atari in the USA and is being corrected.

                              * * *

> Sunnyvale, CA   ****** '030 UP and RUNNING!! *****

     The famed 68030 machine, all dressed up in it's snappy cabinet, which
resembles an 'AT' cabinet, is UP and RUNNING. Having no trouble at all
with Unix 5.3 and TOS 1.4 the machine handles both OS with ease!! This
baby will debut in Hanover.

                              * * *

> Sunnyvale, CA   *****   ATW shipping in GERMANY! *****

     In a timely fashion, the ATW is shipping at this time in Germany.
How perfect the timing ...just right for the Hanover Show....

                              * * *

> Sunnyvale, CA   ****** FEDERATED HIRES 15! *****

     With Federated at the corporate level hiring fifteen folks, it would
certainly seem that Atari is on the march in more than one direction,
maybe, just maybe we WILL see something great out of Federated. (M.O.?)

                              * * *

> Tucson, AZ   ******* PRACTICAL SOLUTIONS EXPANDS!! *******

                    ->GRAND OPENING - MARCH 01, 1989<-

     In about three weeks the wonderful folks at Practical Solutions will
celebrate the Grand Opening of their NEW Business Headquarters. The new
quarters are palacial and designed with the future in mind.

                    CONGRATULATIONS TO MARK & Co.!!!

                      The new Address and Phone #
                          EFFECTIVE: 03-01-89
                          Practical Solutions
                          1135 No. Jones Blvd.

```
                        Tucson, Arizona    85719
                            602-322-6100

                                * * *


> Orem, UT      ***** Word Perfect ST UPDATE TO 4.1 ALMOST READY! *****
  --------


      During a recent conversation with a service rep at WP we discovered
that the new update of version 4.1 will allow the UIS II or the TOS 1.4
Item Selectors to be used ...additional enhancements are to be announced
along with the release date of the upgrade (1-3 weeks). Those interested in
keeping abreast of the update may call: 1-800-321-3271.

                                * * *



> Middlesex, NJ              *****   Z-NET to be LAUNCHED   ******
  -------------


      Syndicate Publishing, owned by Ron Kovacs, has announced the coming
of Z-NET.  We at STR find the principle and implimention of Z-NET quite
refreshing, it relies upon and benefits participating Usergroups monetarily
while opening ways for the Usergroups to grow and promote themselves.

For more information contact:

                            Ron Kovacs
                               C/O
                         Syndicate Publishing
                           201-968-2024

                                * * *



> Jacksonville, FL   **** How do you spell relief?  AVANTE GUARDE!!! ****
  ----------------


      Even though Bill Teal is under an extremely heavy work schedule
trying to finalize the new PC Ditto II, he found the time to put together
the needed fixes for the new Atari "Megafile" Hard Drives.  The actual
files needed may be found online in the vendor areas. The files to look for
are: UMFPATCH.PRG - AHDFIX2.PRG - UMFILE.DOC

                                * * *



> Pontiac, MI     ****** MICHTRON RELEASES FLEET STREET PUBLISHER *****
  -----------                     Version 2.0


      The ultra powerful G-DOS driven version of Fleet Street Publisher is
about to debut in every dealer across the country.  This program promises
to have features incorporated in it's design no other DTP in the ST arena
has.  This resurgence of high quality software from Michtron is certainly a
show of faith in the Atari ST market.  HiSoft Basic Professional, ProText,
DevPac and now...Fleet Street Publisher.

                          Michtron Inc.
                       576 South Telegraph
```

```
                       Pontiac, Michigan  48054
                         313 - 334 - 5700


                              *  *  *



> Alameda, CA          ****  SPECTRUM HOLOBYTE - ON THE MOVE ****
  -----------


     Despite grim sounding notes on the services, Spectrum HoloByte has
indicated it intends to continue to support the ST.  In a short
conversation with J. Sciracia of Spectrum HoloByte, he told us that the
7800 (Atari) joystick if plugged in when booting, will cause strange
occurances.  He advises that one wait till after the boot-up then plug in
the 7800  joystick and enjoy the challenge of Falcon ST.  The st version
of Falcon is now being fine tuned for the ultimate in reaction time for
all phases, he said.  We were also advised of the upcoming release of the
FULL version of Tetris, it is 100% better than any teaser you may have
seen of this program, he said.



                              *  *  *






---------------------------------------------------------------------------




STR Tech Notesâ ¢
==============




                     HARD DISK FACTS -  NOT MYTHS
                     ============================



by R.F. Mariano


To begin, 99% of all hard disks are made to conform to IBM standards. With
this thought in mind we shall proceed.........

The most readily available and in my opinion, the most reliable  and
economical hard disk mechanism is from Seagate......next in line is the
Miniscribe (noisy). There are others but you must make sure they conform
to the IBM standard.

                     IBM STANDARD: ST-506/ST-412
                     ---------------------------

Most commonly found hard drives do not have controllers built in. These
are the most reliable and economical drives to use.
```

```
WHAT IS THE CONTROLLER???
=========================
This goodie is the custodian of your hard disk!  It directs all I/O
functions to the hard disk and it points to and accesses each cylinder.
It "controls" everything.


                        FACTS FOR REFERENCE
                        -------------------


ST 412 DRIVES WITH MFM ENCODING    5.0 MEGABITS/SEC.
-----------------------------------------------------------------------
DATA            ST 125       ST138        ST225        ST251       ST251-1
-----------------------------------------------------------------------
SIZE f'm'd      21           32           21           42          42
# HEADS         4            6            4            6           6
CYL's           615          615          615          820         820
STEP RATE uS    3-200        3-200        5-200        3-200       3-200
AC'S TIME mSEC  28           28           65           40          28
WRITE PRE'C     N/A          N/A          300/614      N/A         N/A
POWER watts     10           10           14.8         11          12
                ---------------------------------------------------------
                ST4038       ST4051        ST4053        ST4096
                ---------------------------------------------------------
SIZE f'm'd      31           42            44            80
# HEADS         5            5             5             9
CYL'S           733          977           1024          1024
STEP RATE uS    10-70        10-70         3-70          3-70
AC'S TIME mSEC  40           40            28            28
WRITE PRE'C     300-732      N/A           N/A           N/A
POWER watts     25.5         25.5          23            25.5
                ---------------------------------------------------------
ST 412 INTERFACE DRIVES WITH RLL ENCODING    7.5 MEGABITS/SEC
-----------------------------------------------------------------------
DATA            ST138R   ST157R    ST238R    ST251R    ST277R   ST4141R
-----------------------------------------------------------------------
SIZE f'm't      32       49        31        43        65       122
# HEADS         4        6         4         4         6        9
CYL'S           615      615       615       820       820      1024
STEP RATE uS    3-200    3-200     5-200     3-200     3-200    3-70
AC'S TIME mSEC  28       28        65        40        40       28
WRITE PRE'C     N/A      N/A       N/A       N/A       N/A      N/A
POWER watts     10       10        14.8      11        11       25.5
                ---------------------------------------------------------
SCSI INTERFACE (EMBEDDED CONTROLLER) HARD DISKS
-----------------------------------------------------------------------
DATA            ST138N      ST157N      ST225N      ST251N      ST227N
-----------------------------------------------------------------------
SIZE f'm't      32          48          21          43          64
SECTORS         63,139      95,015      41,170      84,254      126,790
ACCESS TIME     28          28          65          40          40
POWER watts     12          12          16.8        13          13
                ---------------------------------------------------------

            All of the above are: FCC, TUV/UL/CSA [CERTIFIED]

The list of other types of drives is large, some are, Disctron, Lapine,
Microscience, Micro-memories, Miniscribe, Priam, Rodime, Shugart, Tandon
and Tulin.  The formatted size of these range anywhere from 1.5 - ???Mb.
```

I purposely avoided Brand Names of packaged drives because in most
cases they use Adaptek and Seagate or Miniscribe...I have found that
Atari and Supra have gone to the 3.5 hard disk. I will cover those next
time. As far as Atari is concerned, they would have saved a fortune in
R&D if they had used the standard assembly, as the method they used is so
typical of Atari, "they walked all 'round the barn to walk in the front
door", why did they have to change the 'prom, it made the SH204 a problem
maker, why the dip switches?,,do they really think the Atari user can't
handle Terminal resistor packs and jumpers??? Bad Move! Some of the
companies have gone to Miniscribe, (the coffee grinder) to cut production
costs, they will go back to SEAGATE as soon as they realize the RMA
numbers climbing steadily.

Remember that all these drives (except for a few with embedded controllers)
are shipped without a controller, you really want it without a controller.
It's less expensive and works out much better for you in the long run.
As you will soon find out.

            :The actual chain of connection for a hard drive is:

      1-hard disk
      2-controller
      3-interface (host adapter) ..and the DMA port or SCSI (scuzzy) port.

[MFM] This is a format style most commonly found in use although recently,
[RLL] has been becoming far more popular as it is a condensed compact
format thus allowing more data to be stored on an equivalent size hard
disk. The major difference is the media itself in the hard disk is
PLATED to insure accuracy and longevity. Think of it like plain
recording tape and Cr02 Chromium Dioxide tape. The recording media in
the "R" drives (Seagate) is of a 'higher' quality.

In most cases, the Interface, (Host Adapter) determines what type of
system the hard disk will comply with. It also (usually) has a clock/
calendar built in.

In reality, you can take a hard drive system made for an 8bit XL/XE and
change the interface to one for an ST and it will now work on the ST
(after a format).

The two most widely used controllers, and I might add are abundant and
reliable, are made by Adaptek they are designed with the user in mind and
provide for expansion for the future.

                    ADAPTEK 4000 SERIES CONTROLLERS

        ACB-4000A   ACB-4070
        ---------   --------
           MFM   RLL

Interface SCSI dr type   ST506/412   ST506/412 [RLL-Certified]

While Adaptek does offer other controllers, the 4000 series seem to be the
most popular. Note: the 4070 does require sheilding when mounted close
to the drive.

```
                              ACB-5500
                              --------
                                MFM

The Adaptek 5500 type controller is MFM only and can handle four hard
drive / SCSI devices.  This type of controller is ideal where a BBS is
concerned and interior cabinet space is at a premium.  Not to mention the
savings in controller costs, the other controllers available will handle
only 2 devices.



                     OMTI HIGH SPEED CONTROLLERS
                     ===========================

OMTI offers the fast controller, that is, the 3500 series of controllers
offer a speed increase on any hard disk of at least 15% and are RLL.



The following hard disk systems are special in one way, they have embedded
controllers.
                              IOMEGA
                              ------
          ALPHA 10H                              BETA XXX interface
SCSI dr type     Cart 10mb                            Cart xxmb

                              RODIME
                              ------
          RO650                                 RO652 interface
SCSI  dr type     10mb                                20mb

                             SEAGATE
                             -------
             ST138N interface  SCSI dr type     30mb  3.5 inch
             ST238N interface  SCSI dr type     30mb  5.5 inch

note:  Seagate has many more embedded drives, we listed the above as
examples to show the user the proper nomenclature ..all Seagate embedded
controller drives use the suffix "N".



                     WESTERN DIGITAL
                     ---------------
         WD1002-SHD interface   SASI dr type     ST506/412

                           XEBEC
                           -----
          1410                                 1410A interface
SASI dr type     ST506/412                           ST506/412

* These devices are SASI and are slowly fading into the sunset......



ADAPTEK CONTROLLERS
===================
ACB4000A / ACB4070 / ACB5500 are highly recomended and of excellent
design.  These controllers will handle most any application.



HARD DISK INTERFACE
===================
```

There are four types available for the ST: Atari, ICD, Supra, and Berkley
Of the four mentioned, ICD and Supra are the most popular.

THE ICD ST HOST ADAPTER INTERFACE
=================================

The Host Adapter is designed for the 16 bit ST hard drive system or for
most anything you care to couple to it...ie, tape backup and hard disk
and laser printer etc..

The host adapter interface is also equipped with an programmable clock -
calendar and is non-volatile thru the use of a lithium battery.

ICD also provides a fine Hard Disk Utility Program, "CleanUp" which
'recognizes' the ICD Host Adapter then proceeds about it's duties.

NOTE: Recently, ICD has introduced product recognition code into it's
        support programs, therefore, you will need to be using the ICD Host
        Adapter to have the ICD software operate properly.

                              SUPRA

All of Supra's interfaces are quite good, and have basically the
same features as ICD. Supra also provides additional chaining thru scsi
ports. So far, Supra has not introduced any type of "protection" into
it's support software. (applause)

Some Valuable Observations
==========================

The configurations for the hard disk systems are variable, for example,
if you wished to use the stand alone system with a different computer you
would be able to do so simply by changing the interface.

Expandable means you can add another drive at a later date in the existing
cabinet without major circuitry changes. The proper cabinets are those
made for the IBM twin half height disk drives. They take up less of a foot
print than the SH204 and have a 70watt switching power supply and blower
included at no extra cost. Also included is a matching blank panel for the
empty drive space if you are using only 1 half height drive to start with.
The all steel cabinet fits like a glove. It has a handsome front panel
with an LED pilot light and is light gray in color.

All Information provided by:

                    ABCO COMPUTER ELECTRONICS INC.
                           P.O. Box 6672
                    Jacksonville, Florida 32236-6672

                           904-783-3319

                 HARD DISK SYSTEMS TO FIT EVERY BUDGET

```
                   ------------------------------------

   20mb #SG20510   489.00                    30mb #SG32610   549.00
   40mb #SG44710   649.00                    65mb #SG60101   949.00
   80mb #SG840110 1019.00                   130mb #SG3A1210 1449.00

              larger units are available - (special order only)

         ***  Available for ST - Amiga - Mac - IBM   ***

                        6 month FULL Guarantee
                               followed by
                    6 month Parts & Labor Warranty

                          (under normal usage)
```

STReport InfoFileâ ¢
=================

                                             :Notice to Atari Developers:
                                             ============================

        Mr. Sig Hartmann requested that this message be forwarded to all
interested parties via the networks:

        Mr. Hartmann will be leaving for Europe during the first week of
March for the Hannover Computer Show and will be meeting with a number of
large distributors of Atari related products.

        Some time ago, Mr. Hartmann had stated that he would like to assist
any of the developers who would like to have their products distributed in
the European market.

        If you have an interest in marketing in Europe, please forward to Mr.
Hartmann's office the following prior to the end of Feburary:

         1. A Description of your product.

         2. A retail price and margin information in US dollars.

         3. If possible, a sample of the product.

             If you have or need more information:

          Please contact Sig Hartmann at (408) 745-2000.

                  Address all correspondence to:

```
                    ----------------------------

                         Atari Corporation
                         1196 Borregas Ave.
                        Sunnyvale, CA 94086

                        Attn: Sig Hartmann




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STR Spotlightâ ¢
=============
    FYI


                        ATARIANS IN SPACE
                        =================


Well, almost!

        As a service to our readers, we at STReport would like to present an
extremely interesting BBS.  Sponsored by and operated by N.A.S.A....that's
right the National Aeronautics and Space Agency.


                          NASA ALA BBS
                          ------------
                        1-205-895-0028



        A Space-Related Informational Database provided by the NASA
Educational Affairs Division operated by the Marshall Space Flight Center
on a Data General ECLIPSE MV7800 Minicomputer.


NOTICE:  This service is free.  But, you need to understand that you will
be charged by your phone service if you're calling long distance to our
computer in Huntsville, Alabama.  So use it all you like, but remember,
it's your nickel.  This system is designed for 80 column text display.
On computers that display fewer than 80 columns, some text may be
distorted.


NASA SPACELINK BACKGROUND

NASA Spacelink runs on a Data General ECLIPSE MV-7800 minicomputer at the
NASA George C. Marshall Space Flight Center in Huntsville, Alabama.  NASA
Spacelink software was developed and donated to NASA by the Data General
Corporation. The system has a main memory of 14 megabytes (14 million
characters), and disk storage space for 708 megabytes.  It runs at 300, 12
```

or 2400 baud. Data word format is 8 data bits, no parity, and 1 stop bit.
The system was made public in February, 1988.

Initial support for NASA Spacelink was provided by the Educational Affairs
Division at NASA Headquarters. The NASA Spacelink data base is maintained
by the Public Services and Education Branch of the Marshall Space Flight
Center Public Affairs Office. Operational support is provided by the
Information Systems Office at the Marshall Center. Information on NASA
scientific projects and educational programs is provided to NASA Spacelink
by education specialists at NASA Headquarters and the NASA field centers.

While NASA understands that people from a wide variety of backgrounds will
use NASA Spacelink, the system is specifically designed for teachers.
Unlike bulletin board systems, NASA Spacelink does not provide for
interaction between callers. However, it allows teachers and other callers
to leave questions and comments for NASA.

Typical Items Covered in the System.

 2/8/89: NASA ANNOUNCES EARTH OBSERVATION SYSTEM INVESTIGATIONS
 2/8/89: CONDITION OF QM-8 SOLID ROCKET MOTOR FIELD JOINTS
 2/7/89: DAILY UPDATE OF NASA SELECT TV PROGRAM SCHEDULE
 2/6/89: JSC AWARDS WHITE SANDS SITE SERVICES CONTRACT TO LOCKHEED
 2/6/89: MITRE CORP. WINS INFORMATION SYSTEMS ACQUISITION SUPPORT CONTRACT
 2/6/89: RADIO PROGRAMS ON NASA SELECT
 2/6/89: CONDITION OF QM-8 SOLID ROCKET MOTOR FIELD JOINTS
 2/6/89: EFFECTS OF CLOUDS ON CLIMATE MEASURED BY NASA PROJECT
 2/3/89: STS-29 COUNTDOWN DEMONSTRATION TEST SCHEDULED FOR FEB. 7
 2/3/89: STS-29 MISSION PROGRAM DECISIONS PRESS BRIEFING
 2/2/89: STS-29 SPACE SHUTTLE TO MOVE TO LAUNCH PAD
 2/1/89: LAUNCH ADVISORY: STS-29 ROLLOUT CHANGEOUT OF HPOTPs ON SSMEs
 2/1/89: BALLHAUS RETURNS TO AMES RESEARCH CENTER
 1/31/89: New Mexico CAP Assist NASA Search and Rescue Experiment
 1/30/89: NASA WORKSHOP TO EXAMINE MARS MISSION TECHNOLOGY
 1/25/89: NASA ANNOUNCES PROGRAM FOR A DRUG-FREE WORKPLACE
 1/23/89: NASA AND NIH APPOINT INTERAGENCY WORKING GROUP MEMBERS

NASA Spacelink BBS typical categories:

     NASA Spacelink Overview   Current NASA News

                         Aeronautics
               Space Exploration: Before the Shuttle
               Space Exploration: The Shuttle and Beyond

     NASA and its Centers   NASA Educational Services
     Classroom Materials   Space Program Spinoffs

NASA Aeronautics

     Basic Research and Technology   High Performance Aircraft
              Subsonic Aircraft (Transports, Helicopters)
                    New Aviation Applications

NASA Educational Services

    Aerospace Education Services Project (AESP)
    Teacher Resource Centers
    NASA Spacelink
    NASA Educational Workshop for Math and Science Teachers (NEWMAST)
    NASA Educational Workshop for Elementary School Teachers (NEWEST)
    Teacher Workshops
    Space Science Student Involvement Program (SSIP)
    Urban Community Enrichment Program (UCEP)
    Summer High School Apprenticeship Research Program (SHARP)
    Lunar Sample Education Project
    Science Fairs
    NASA Educator Mailing List
    NASA Regional Center Education Offices (Mailing Addresses)
    Langley Telelecture Program
    NASA Central Operation of Resources for Educators (CORE)
    Videoconferences

This neat system was reccommended to us by one of our readers, we were
quite impressed with the valuable and informative data available to any
caller. We see this system becoming a vital link in the education system
once it's exsistance becomes well known.

STReport NewsPlusâ ¢
==================

MACE Announces Atari Show
=========================

Contact: Pattie Rayl (313) 973-8825

(Southfield, MI) -- Michigan Atari Computer Enthusiasts (MACE) announces
the Michigan Atari Computer Expo to be held on May 6 & 7, 1989. The Atari
Show will be held at the Detroit Metro Airport Hilton, located adjacent to
the Metro Airport. The Show will be open from 10 AM to 6 PM on May 6 and
from 10 AM to 5 PM on May 7.

"We plan on filling over 40 booths with developers, retailers and dealers
-both large and small," said MACE Convention Coordinator Pattie Rayl.
"This show is planned with the Atari User and User Groups in mind. Some
vendors will be offering incentives or discounts to User Group members.
If you don't already belong to a User Group, clubs will be available to
take memberships. Whether you have an 8bit or an ST, you'll find lots to

interest you at the Michigan Atari Computer Expo!"

The last show in the Detroit area, the Detroit MAGIC Show, was praised by
exhibitors and attendees alike, and MACE plans to continue the tradition.
MACE, one of the nation's largest and oldest Atari User Groups, was the
first club to produce an Atari-only show with the Taricon '84 AtariFest.
MACE currently has a membership of nearly 300 dedicated Atarians in Michigan
and across the US.

MACE would like to welcome other Atari clubs to attend the show, and
offers free booths to those who would like to come. MACE knows how hard it
is being an Atari club nowadays and offers User Groups a chance to
participate in the advanced ticket sales program to help them raise funds
for their club. Even if User Groups don't wish to participate in the
advance sales program, their members will be able to receive a discount on
show tickets.

Discount airfare is also available from Northwestern Airlines. Northwest
offers 40 percent discount on coach fares and 5 percent discount on other
fares. The Detroit Metro Airport Hilton is also offering discounted room
rates of only $55.00 a night for single or double occupancy. Normal rates
each night are $127.00!

For more information on the Michigan Atari Computer Expo please contact
Pattie Rayl at (313) 973-8825 or write to The Michigan Atari Computer Expo,
MACE, 3487 Braeburn Circle, Ann Arbor, MI 48108.

THIS WEEK'S 'QUOTABLE QUOTE'
============================

        A Profound Statement
        ====================

            "Never attribute to MALICE that which is adequately
                    explained by pure STUPIDITY!"

                    "1989 - ATARI'S QUEST"